

## TROPHELIA



In the light of the successful French experience, TROPHELIA has been chosen as the Student Prize Initiative, foreseen by TRUEFOOD DIP, in order to contribute not only to attract students to the food sector but also to provide a hotbed of innovative ideas for the food industry.

TROPHELIA began a flagship competition played by SPES Federations joining TRUEFOOD Project, aimed to encourage the creation, implementation and development of new food products by teams of students from scientific and commercial establishments of higher education.

National winners will compete among them in TROPHELIA EUROPE, during SIAL Exhibition (Paris, October 2010).

Trophelia initiative is fully in line with the Lisbon strategy that has the objective of boosting innovation that should lead to increased competitiveness of European industries. In addition, Trophelia Europe is in agreement with the strategic agenda of the European Technology Platform "Food for Life" which integrates an educational dimension to ensure the availability of work force in the food sector via activities: attracting young people to choose a career in the food sector, improving the innovation culture and awareness.

Indeed, the availability of skilled and innovative-minded workers is a key condition for successful innovation. The implication of the National Food Federations, under the auspices of CIAA and its Research and Development activities of, is a very positive sign of the companies' willingness to involve themselves in Research and Innovation.

Moreover, the wide participation of UE countries will contribute to the emergence of European dynamic allowing new entries to benefit from the experience of leading countries in the field of food research.

## TROPHELIA ITALIA 2009

The Italian competition for TROPHELIA, had been held in Parma last 29 October, during CIBUS TEC exhibition, and the winner was the team G60 from University of Milan with a project called "Vermouth Spray". This team will represent Italy in TROPHELIA EUROPE (Paris, SIAL Exhibition, October 2010).



# The 10 things you didn't know about Traditional Food Products

## Did you know ...

### 1. ...what is the European consumer's image of a traditional food product?

A product frequently consumed or associated with specific celebrations and/or seasons, transmitted from one generation to another, made in a specific way according to the gastronomic heritage, distinguished and known thanks to its sensory properties and associated to a certain local area, region or country.

### 2. ...that traditional food can be innovative?

Tradition and innovation are not necessarily opposed. Almost 5.000 European consumers expressed their choice for several innovations thanks to the TRUEFOOD project.

### 3. ...what is an active packaging?

Active packaging refers to the incorporation of material's into packaging systems with the aim of improving or extending packed product quality and shelf-life.

### 4. ...that decreasing salt consumption is one of the main objectives of the European health policy in order to reduce the risk of coronary diseases?

TRUEFOOD researchers are studying the effect of using potassium lactate to reduce salt content up to 50% in dry-cured hams.

### 5. ...that it is possible to avoid the pesticides use in the Mediterranean vegetable crops?

TRUEFOOD researchers are evaluating the employment of selected plants, as flower strips, to control the parasite population without spraying the lettuce crops.

### 6. ...that it is possible to reduce the energy consumption in the cheese production?

TRUEFOOD researchers are studying the sequential steps of the air ventilation on cheese ripening as a possible tool for energy saving.

### 7. ...that, within the TRUEFOOD project, we are trying to improve the safety and sensory qualities of traditional food products origin?

TRUEFOOD researchers are evaluating the addition of "friendly" microbes and/or protective cultures in cheese manufacturing, in order to improve the safety and sensory qualities of traditional dairy products.

### 8. ...that within the TRUEFOOD project, we are studying a new tool in order to detect the presence of toxins in the food chain?

TRUEFOOD researchers are trying to develop sensitive diagnostic tools for toxins detection in traditional food products (i.e. beer).

### 9. ...that it is possible to improve the nutritional composition of standard milk?

TRUEFOOD researches are trying to decrease the saturated fatty acids content in milk without negatively affect the sensory characteristics of some traditional dairy products.

### 10. ...that one of the main goals of TRUEFOOD project is the dissemination of the knowledge achieved about the innovation on traditional food products?

Within the TRUEFOOD project, 11 Training and Dissemination Units (TDUs) have been established. Up to now, the TDUs have already reached about 42.000 contacts (general public, higher education, companies, research centers, media, public authorities) in Europe and trained more than 2500 SMES.



## SAVE THE DATE

### TRUEFOOD FINAL CONFERENCE

13 April 2010

from 9.00 a.m. to 5.00 p.m.

"La Bibliothèque Solvay"

Parc Léopold, 137 rue Belliard

Bruxelles - BELGIUM

For info: [www.truefood.eu](http://www.truefood.eu)



# TRUEFOOD training programme targeting SMEs in the food sector

From the beginning of training activities until now about 130 events (i.e., workshops, seminars and courses) targeting more than 3.000 attendees from the traditional food sector were implemented in strong cooperation with the research partners and centers of excellence of the project. A mid-term assessment of activities indicated that participants are highly satisfied. In the following a testimony of a participant interviewed by TDU ANIA and a list of selected events to be held in SPES members countries.

## What they say about us

ECOPOLE France is a french SME specialized in ingredients and intermediary food products. It is technical & Quality manager, Franck CONSTANT, has participated in several TRUEFOOD trainings organized at French level.

He says: "Truefood trainings are effective tools to optimize food SMEs processes and ways of thinking. The food law related training explains european requirements for food actors, clarifies regulations and presents what should be the content of health management plans. Others trainings favor the acquisition of skills related to usually annex activities. Thus, the packaging training allows my company to understand the phenomena of

migration between contact material and food with supporting examples and methodology for measuring it. In my company, this knowledge has been useful to improve the quality and purchasing policy towards countries outside EU or simply redefine quality specifications. But it seems that their scope will be even more implemented over the medium term."

He concludes by adding: "TRUEFOOD fits perfectly with the mechanism of SMEs in terms of both food security issues and innovation strategy. Moreover, the profile of the trainings' facilitators (that are close to the FOOD industry) makes presentations pragmatic, concise and user friendly.

## List of selected forthcoming training events to be held in: Italy, Hungary, France, Belgium and Austria

For more information regarding the training events to SMEs please contact Cecilia Chiapero (TRUEFOOD Training and Dissemination Manager) at [training@truefood.eu](mailto:training@truefood.eu)



### AUSTRIA

#### Food Law in Hungary and Slovenia

25/11/2009 - Wien

Organized by TDU FIAA/LVA.

Contact person: Julian Drausinger (jd@lva.co.at), Tel. +4317122121. ■



### BELGIUM

#### Innovation in Beer

13-11-2009 - Brussels

Organized by TDU FEVIA and University of Perugia.

#### Innovation in Dairy Products WP6 applications

March 2010 (exact date and place to be confirmed) - Flanders  
Organized by FEVIA and ACTIA.

#### Innovation for Traditional Food Products: WP6 applications

March 2010 (exact date and place to be confirmed) - Wallonia  
Organized by FEVIA and ACTIA.

Contact person: Anne-Christine Gouder (acg@fevia.be),

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### FRANCE

#### Research and innovation day for food industry

3/11/2009 - Clermont Ferrand;

19/11/2009, Rennes;

January 2010, Dijon and Nancy (exact date to be confirmed).

Organized by ANIA, ACTIA and INRA

#### Training on "Microbiology and Truefood research results"

22/01/2010

Organized by ANIA and ADRIA QUIMPER.

Contact person: Françoise Gorga (fgorga@ania.net),

Tel. +33153838617. ■



### GREECE

#### Seminar on "Food quality & Communication"

Language of the training: Greek.

Location: Athens, Greece.

Date: 11/11/2009.

Organized by TDU SEVT

#### Seminar on "Food Safety: PAS 220:2008"

Language of the training: Greek.

Location: Athens, Greece.

Date: 1<sup>st</sup> week of December.

Organized by TDU SEVT

Contact person: Dr Fotini Salta (fotsal@sevt.gr), Tel. +302106711177. ■



### HUNGARY

#### Traditional Food Products, market and consumers.

12/11/2009 - Budapest

Organized by TDU FHFI, CCH and Nofima Mat.

Contact person: István Pauer (pauer@efosz.hu), Tel. +3613754721. ■



### ITALY

#### Innovative food packaging and food law

11/12/2009 - Bari:

Organized by TDU FEDERALIMENTARE and ENEA.

#### Marketing strategies for improvement of traditional products in Campania Region

28/01/2010 - Naples

Organized by TDU FEDERALIMENTARE, PEGroup and University of Milan.

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## The success story of the Association of the Hungarian Pálinka Knights' Order

**One of the most significant success stories with Hungarian food SMEs is the case of the Hungarian pálinka producers:**

Pálinka is the name of the pure fruit brandy, which is prepared by distillation solely from fermented fruit. The name "pálinka" can be used only for pure fruit brandies distilled solely in Hungary and 4 Austrian regions. All sorts of fruits grown in Hungary can be used as raw material, mainly plums, apricots, pears, sour cherries, cherries, peaches, apples, blackberries, blueberries, etc.

The members of the Association of the Hungarian Pálinka Knights' Order exchange their knowledge and experience from raw material growing, through fermentation, distillation and retail about the methods of improving the quality of the drink.

The collective efforts attracted increasing amount of public contribution and also private funds. Tourism, culture and traditional

foods can be connected and marketed jointly. A set of activities is carried out for promotion of the quality image of the pálinka. Festivals, product demonstrations and tastings, pálinka contests, conferences are organised around the country, specifically attached to gastronomic events.

Consumer awareness has been appreciably increasing.

The Hungarian pálinka has significantly improved in the last 3-4 years and moved from a cheap commodity towards a specific premium quality drink, which is a part of the national gastronomic heritage and an element of the attraction of specific locations, regions.

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## Ernesto Morgado S.A

**Founded in 1920, Ernesto Morgado S.A. is the oldest rice mill in Portugal and continues to be a family-owned company, with a 4-generation knowledge of the rice business.**

Recognized as SME Leader in terms of good performance and level of risk, it was also invited to be part of SME Innovation Network of COTEC Portugal, an association that promotes innovation, created under the "patronage" of the President of Portugal.

Recently, the company went through a comprehensive and ambitious modernization plan, with deep changes at the level of infrastructures, equipments, processes and management. The outcome includes (i) a modern, efficient and automated rice milling process; (ii) active RDI (Research, Development and Innovation) delivering new products adapted to modern consumer requirements, specially made with Japonica Rice (a Portuguese traditional food and a local agriculture resource); (iii) new secondary processing facilities (finished rice products and ready meals); (iv) an Integrated Quality Management System encompassing quality, safety and environmental protection (ISO 9001, 14001 and 22000).

In a country with a strong traditional cuisine in rice such as Portugal, successful innovation means developing convenient, high quality products with Portuguese flavour at competitive prices. This is the aim of the company's strategy, which in the last 3 years increased by 400% its product range as well as the value delivered to the consumer.

Believing to be the only company in the world to innovate in ready meals using Japonica rice instead of Indica Parboiled rice, its new product line Pato Real Minuto results from using RDI to add value to a local and traditional food resource, the Japonica Rice of Mondego Valley Carolino.

Carolino is the only type of rice produced in Portugal with very high quality and yield and is used in most traditional and famous Portuguese rice dishes because it absorbs the flavour, colour and scent of the other ingredients which is cooked with. However, it is also very sensitive to cooking and re-heating, making it extremely hard to work with in thermal sterilisation processes, being necessary to innovate both in product molecular structure control and in technological process flow.

Ernesto Morgado S.A. developed, under TRUEFOOD Project and with FIPA collaboration, an industrial process to produce ready-to-eat rice products, both full and side dishes, using Japonica rice and other natural ingredients, to be heated in just 2 minutes in a microwave, that taste like home cooked dishes (although being sterilised by heat) and without using preservatives nor chemical artificial additives.

The challenge of creating cutting edge delicious, easy-to-cook, high quality meals made with Japonica Rice from the Mondego Valley, was possible due to the establishment of partnerships with foreign and national universities: University College Cork (Ireland), Escola Superior de Biotecnologia da Universidade Católica (Oporto) and Escola Superior Agrária de Coimbra.

## Salaisons du Pont d'Amour

**A unique cooperation started one year ago between a TSM and a Belgian food SME. It was generated by a TRUEFOOD training course. Trust between the TSM and the company was a crucial point which led to the support on technological innovation, networking and the development of various competences useful for the company's growth.**

Salaisons du Pont d'Amour are raised by the Beghuin's. This family SME has been producing many delicious traditional meat products from a specific area of Belgium (Ardenne) since 1990. In particular they process the Ardenne Ham artisanally.

The TSM of TDU FEVIA met the Beghuin family last September 2008. Three of them registered at the first training event organised by Belgium under the TRUEFOOD project. A 3-days trip was planned in South-West France to visit the professional and scientific structures of a French Ham (Consortium du Jambon de Bayonne).

This training activity allowed the participants to meet the researchers and technicians who process the French Ham. They visited several laboratories and an experimental station where innovation was applied to the meat products. Many exchanges occurred.

Back to Belgium, the Beghuin's started immediately a new trial. The objective was to process their Ardenne Ham differently. Two innovations were tested : an improvement in the visual aspect of the slice and an extension of the shelf-life without salt addition. Last

March, the new hams were ready. The TSM had the chance to taste the products (they were excellent).

The TSM maintained active contacts with the SME, by regular phone calls and e-mails. Results of the TRUEFOOD project, but also other information and initiatives in Belgium, were regularly sent to the SME. The TSM met the SME again, at their open-days to visit their structure or during events like FEVIA's. The Beghuin family came to several training courses organised by TDU FEVIA : salt reduction, ham specification and local marketing.

The SME also took initiatives towards TRUEFOOD : they showed the pictures of the training event during their open-days. They contacted the TSM for another needs (on marketing, commercial opportunities, creation of website, financial help for public funding). In other words, the SME opened itself and exposed its main concerns. The TSM support their will to become more competitive, despite the harsh economic context in Belgium during 2008-2009.

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## Development of a product specific predictive model

**In the context of wp3 and specifically in Task 3.3 “Predictive modelling and microbial risk assessment”, a product specific model was developed and validated for Giotis S.A. to quantify the responses of a five strain cocktail of *Listeria monocytogenes* in pasteurised vanilla cream after post-processing contamination and predict the responses of the pathogen in two dynamic (periodically fluctuating) temperature scenarios.**

For this reason, commercially prepared vanilla cream samples were artificially inoculated with a low initial inoculum (ca  $10^2$  cfu/g) of the pathogen and stored at four different isothermal temperatures (3, 5, 10, and 15°C) for up to 36 days. The growth kinetic parameters (growth rate and lag phase duration) at each temperature were determined by primary modeling approaches. The determined growth rates of the pathogen were further modelled as a function of temperature by means of a square root-type model. The performance of the model in predicting the growth of the pathogen at dynamic temperature conditions was based on two different

temperature scenarios with periodic changes from 4 to 15°C. Results showed good prediction performance of the pathogen's population under fluctuating temperature profile. The outcome of this activity was the development of an Excel spreadsheet that could be used by non-experts to quantify and predict the response of the pathogen under different temperature profiles. The model was further validated, in collaboration with ETAT, with independent data from a demonstration project under wp6 and showed very promising results.

# PROJECT NEWS

## Work Package 1:

### Determination of consumer perception, expectations, and attitudes

During the last year of TRUEFOOD several experimental consumer studies have been carried out in WP1. Experimental auctions have been done in France (cheeses: Comté and Cantal, Norway (smoked salmon), Poland (Kabanos, a traditional Polish sausage) and Spain (dry cured ham). In each country samples of consumers have evaluated traditional and innovated versions of products in different information conditions i.e. blind testing, expectancy rating and rating in informed condition. The main aim is to determine the acceptability of innovations in traditional food products, and the price that consumers are ready to pay for these products, compared to traditional versions.

Further, conjoint studies have been performed on cheeses: in France (Epoisses), Norway (Jarlsberg), Italy (Caciotta Romana) and Spain (Recuit de drap). Corresponding conjoint studies have been performed on local varieties of dry cured ham in the same four countries. Conjoint methodology makes it possible to learn about consumer acceptance of selected innovations and subsequent buying intention for the products.

Results from all these studies are in preparation and will be specified for each product and each innovation. However, the following preliminary conclusions have been made: Consumers' acceptance of innovations in traditional food products is strongly dependent on type of product and type of innovation. Innovations that provide consumers with relevant benefits without producing substantial changes in the products are generally well accepted. ■

#### For any additional information:

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For info regarding WP2, please visit our website: [www.truefood.eu](http://www.truefood.eu)

## Work Package 3:

### Predictive Modelling and Risk Assessment of Traditional European Foods

In the third year of the project, the activities of WP3 were focused on the following three issues: (a) effect of microbial interactions and food matrix on the growth kinetics of pathogens, (b) validation of existing mathematical models for the prediction of safety targeted to specific TFPs, and (c) risk assessment at the time of consumption in different chill supply chains.

New mathematical models have been developed by the Agricultural University of Athens, based on artificial neural networks approach, to describe the effect of food structure and microbial competition on the responses of *Listeria monocytogenes* in meat products. The networks were developed using different training methods and showed very promising results for the applicability of expert systems in quantitative microbiology. Moreover, the effect of food structure on the growth responses of the same pathogen in different gel models, mimicking dairy products, was investigated by ADRIA (French partner). Results showed good performance of the models in predicting the effect of gelling agent, texture and temperature on the growth of the pathogen. Further development and validation of these models is still in progress.

A previously developed model by the Agricultural University of Athens for the growth of *Listeria monocytogenes* in traditional pasteurised vanilla cream was further validated with independent experimental data from a demonstration project under WP6. Results showed satisfactory performance of the model to predict the responses of the pathogen in different time-temperature profiles, not initially included in model development. In addition, the results of challenge tests for the survival of *L. monocytogenes* and *S. aureus* in Hungarian sausages, carried out by Campden & Chorleywood (Hungarian partner), have been compared with the simulation output from Growth Predictor and Sym'Previous ready-to-use softwares. Both softwares gave good results when the intrinsic properties of foods did not change during storage. However, in the case of changing intrinsic properties, Growth Predictor could not provide satisfactory estimations compared with Sym'Previous that presented better performance. Model validation with additional experimental data obtained in the project is in progress.

A simple risk profiling technique was developed by Campden & Chorleywood for *Escherichia coli*, *Listeria spp.*, *Salmonella spp.*, *Staphylococcus aureus* and *Clostridium botulinum* in Hungarian meat products (flamed sausages and dried fermented sausages). Risk profiling was further developed in sliced vacuum-packed sliced pig cheese using the probabilistic module of Sym'Previous. The obtained results indicated that *E. coli* and *Listeria spp.* poses higher risk than *Salmonella spp.*, *S. aureus* and *Clostridium botulinum* in the examined products. Moreover, simulation results with Sym'Previous showed good agreement of pathogens' responses with challenge tests undertaken at the same temperature profiles. ■

#### For any additional information:

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# PROJECT NEWS

## Work Package 4:

### Improving nutritional quality of traditional products in line with consumer demand.

#### Milk and dairy products:

Supplementation of cow's diet based on extruded linseeds has been demonstrated in a previous study to improve milk fatty acid profile. An experiment dealing with the long term effect of cows' diet supplementation is in progress. The aim is to quantify during two successive lactations the effects of long-term supplementation of cow's diet based on different sources of rapeseeds or extruded linseeds (rich in cis9-C18:1 or C18:3n-3) on nutritional quality of milk and on animal production, health and reproductive performances. First lactation results showed that the dry matter intake was not affected by the lipid supplements chosen in this trial but the animal weight seems to be depressed as well as the milk protein content; on the contrary, the milk yield and fat content were not modified. Concerning the animal health and reproductive performance, results are too preliminary to state any conclusion. The second lactation is still running.

Experiments dealing with the use of starter cultures in hard cooked cheeses to increase the bioactive peptides content showed that the combination of thermophilic lactobacilli strains is essential to enhance anti-hypertensive activity in cheese matrix. The *in vitro* anti-hypertensive activity was shown to be linked to the qualitative and quantitative proteolytic potential of lactobacilli strains *L. helveticus* and *L. delbrueckii*. Some factors can interact with starters: the time of ripening, the milk composition or process parameters such as cooking temperature in vat. Nevertheless, as there was a group of peptides with various sequences, it is essential for the future to have a comprehensive view of the enzymatic pathway during food processing, i.e. synergy, antagonisms of action of enzymes in the food matrices and peptides as well as characterization of the microbial machinery *in situ*. Through this work it appears that cheese makers have the possibility to select the most adapted combinations of starters to enhance the production of potential bioactive peptides in the cheeses. Nevertheless, the efficiency of the starter strains has to be checked in industrial plant in order to take into account specific practices such as process scheme and time of ripening commonly used in the plant: this is the topic of a current demonstration activity in the WP6.

ELISAs with monoclonal antibodies reacting against peptidases of *L. helveticus* have been developed in order to build rapid and simple tools to evidence the presence of such peptidases directly in dairy products.



#### Meat and fish products:

Processing of hams from the pig breeding study, which aimed to find the genetic markers to select the suitable animals for production of dry-cured hams with reduced salt content, has been monitored in Slovenia, France and Spain. Results on green ham characteristics indicate possible effects of PRKAG3 and CAST gene polymorphisms on some of the traits important for dry ham processing. However, they were country or cross dependent, indicating possible interaction with other genetic or environmental factors. Additional data concerning processing yields and sensory quality, which are in progress, are needed to achieve final conclusions about the use of these genetic markers as a selection criteria of animals for dry-cured ham production with reduced salt content.

Different technology innovations have been tested to improve the salt distribution and reduce the overall content in dry-cured hams. A Boning-Salting-Binding methodology that facilitates the reduction of NaCl content was developed to produce restructured hams. The reduction of NaCl to 50% in restructured hams processed in this study increased aw, proteolysis and microbiological growth; and modified the instrumental texture parameters. It also reduced saltiness and increased sweetness. The addition of K-lactate to hams with reduced salt content contributed to reduce aw and proteolysis, to assure the microbiological stability (for process temperatures below 15 °C) and to improve those instrumental texture parameters modified when salt content was reduced without modifying the sensory attributes. The use of negative temperatures to dry-cured hams has been demonstrated to reduce the "white film" problem, more important in hams with reduced salt content. A Computed X-ray Tomography (CT) equipment and an on-line NIR equipment have been calibrated for NaCl and water contents prediction in the internal part and in the surface of the ham respectively. CT has been used successfully to assess the NaCl distribution in non-fatty areas of hams after salting and throughout the resting processes. This information was used as inputs in the process design for dry-cured hams with reduced salt content. CT can be considered as a useful tool for characterizing and optimizing industrial processes in meat industry. NIR methodology has been used to control the drying air conditions during ham processing in order to avoid the surface crusting of dry cured hams.



# PROJECT NEWS



An experiment focused in comparing three different salting techniques for salmon fillets (dry salting, brine salting and brine injection) concluded that the brine injection in salmon fillets contributes significantly to a better salt distribution within the product, a better control of the overall salt content, and a higher yield than the traditional dry salting. Smoked salmon with approx 1/3 of the NaCl replaced by KCl were produced and subjected both to a sensory panel and to a consumer test. All samples had acceptable colour, texture and microbial properties. When measured instrumentally, there were significant differences in colour and texture between brine injection and traditional dry salting.

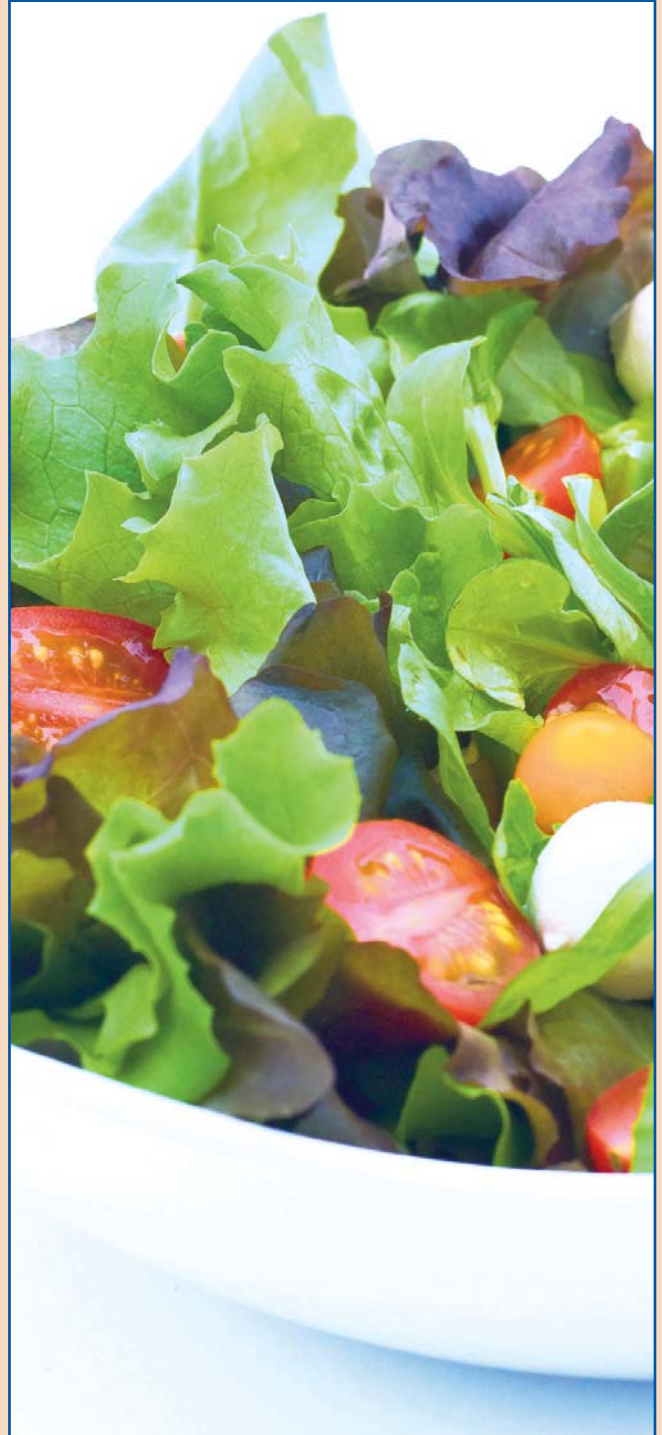
## Fruits and vegetables:

The use of *Lobularia* (companion plant) in lettuce crops as an alternative to pesticide treatment ensured conservation of key predators and maintained lettuce yields and did not affect the quality components of lettuce heads. As a result of predator establishment, prey populations were reduced below the economic threshold. A higher content of phenolic acid derivatives and no significant variation in the level of vitamin C and flavonoids were observed in the samples compared to the insecticide treated ones.

The effects of the variety and agronomic strategies (organic vs mineral fertilization and elicitor treatment with chitosan) on Brassica have been analyzed for experimental field with different varieties (early, Trevi; mid-harvest, Meridien; late season, Favola). Organic fertilization provided Brassica with higher levels of vitamin C than mineral fertilized ones, but also reduced the concentration of folates and the total yield in the early (Trevi) and mid-harvest (Meridien) Brassica varieties. Therefore, the convenience of organic fertilization has to be stated for each variety through the balance between the yield reduction and the improvement of nutritional characteristics. Under our conditions elicitor treatments with Chitosan® did not improve nutritional compound accumulation. ■

## For any additional information:

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# PROJECT NEWS

## Work Package 5:

### Improved marketing and food supply chain organisation methods for traditional food products

The participants of WP5 (Belgium - Ghent University, Hungary - Campden & Chorleywood, Italy - University of Milan and PE-Group) have continued the analysis and comparing of the results of the survey with 271 companies belonging to 91 traditional food chains across three European countries (Belgium, Italy and Hungary) and the survey with 47 support organizations in ten European countries (Italy, Hungary, Belgium, Austria, Switzerland, Greece, Spain, Czech Republic, Romania, France). Further the views of food firms are compared also to the views of consumers (results of WP1).

Next, the WP5 partners have updated and extended the inventory on best practice case studies of traditional and conventional food chains for eliminating or reducing bottlenecks (more than 60 cases). These successful examples demonstrate that there are several ways how SMEs can improve the performance of their chains and networks and demonstrate also the benefits of implementing the chain management approach. The best practice case studies should motivate SMEs to exploit their chain and marketing management capabilities and to implement innovation activities along the chain.

Based on an EU-wide on-line survey on the marketing management with more than 400 SMEs a targeted action plan is developed in order to increase the marketing management capabilities of SMEs. The main weaknesses of SMEs related to marketing management lie in the area of planning and implementation as well as control and evaluation of their marketing activities. Following, policy implications are formulated. These implications suggest that it is important to identify the latent needs of SMEs. Further, when looking for solutions to a specific problem of SMEs, a multidisciplinary approach should be followed. Last, the establishment of a marketing consulting desk at local level to support SMEs is encouraged. In a next step a more extended questionnaire is developed for investigating the competitiveness of traditional food SMEs. Therefore, more aspects of resources, capabilities and competences of SMEs in the traditional food sector are included.

Twelve innovative chain strategies for traditional food chains were developed: 'Product modification', 'Product improvement', 'Make your finance more robust', 'Increase the flexibility of operations', 'Improve the value-for-money in your purchases', 'reformulate logistics', 'Increase the reputation of your firm in the

chain', 'Branding traditional food production', 'Enhance and take advantage of networks', 'Improve the environmental, ethical and traditional compatibility of your business', 'Make your communication effective', and 'Improving the quality of the production process throughout the chain'. In order to localize the best strategy for a firm the wide variety of firms in the food sector has been channeled to a few typical situations allowing for adequate strategic behavior. For instance, the group of "healthy isolated firms" has a very different set of opportunities compared to „barely breaking-even networking" firms. Suitable strategies have been proposed for each group based on their networking intensity and their economic health.

Another aspect the partners of WP5 have worked on was the evaluation of innovative distribution strategies for traditional food products. After the feasibility test conducted with a small sample of traditional food producers, the selected strategies were evaluated by a larger group of traditional food producers. As result of this evaluation the following innovative distribution strategies are evaluated positively by the traditional food producers: 'All-in-one packaging', 'Regional corners in supermarkets', 'Fast food chains for traditional food products', 'Joint distribution of traditional food products', 'Networking facilities', 'Small area penetration for marketing', 'Involvement of the consumer', 'Joint promotion', and 'Agro-tourism'. However, not all strategies are applicable in all of the three investigated countries, Belgium, Hungary and Italy.

Currently, the WP5 partners are preparing a guideline for carrying out surveys with food chain members. Furthermore, the partners of WP5 are continuously collecting examples for the inventory of best practice case studies in order to prepare the final version forthcoming in the beginning of 2010.

In the remaining months of the Truefood project, the partners of WP5 continue to provide training courses on chain management, chain strategies, and chain performance. These trainings have been given in six countries already. Further, WP5 partners will summarize their results in order to formulate recommendations for the traditional food chain members related to marketing and chain management topics. Last but not least, the results and recommendations will be collected in a book with the current working title „Meeting challenges for Innovation, Chain and Marketing Management of Traditional Food Products". ■

#### For any additional information:

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## Work Package 6:

### Pilot scale evaluation, demonstration and transfer of innovation to industry

Within Truefood WP3 several approaches have been developed to evaluate and quantify the most important factors affecting pathogen behaviour in food and include them into mathematical models to describe the effect of static and dynamic environmental conditions. WP6.1.9 demonstration activity mainly concerns the use of already existing software, *i.e.* Sym'Previus to evaluate the growth of spoilage or pathogen micro-organisms in food along shelf-life as a function of storage conditions. Bacterial behaviour has been simulated in meat products (sausage meat and reconstituted steak) for several temperature monitoring

storage scenarii . Simulations have been validated by experimental challenge test results as well for the growth of flora naturally encountered in meat or pathogen *Listeria monocytogenes*. The effect of dynamic storage temperature conditions as well as cold chain break along shelf-life have been satisfactory taken into account. This task further demonstrates the importance to take into account food matrix conditions ( impact of texture, microbial interactions etc..) in microbial development predictions along shelf-life which is possible with available user-friendly decision making tools. ■

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# PROJECT NEWS

## Work Package 7:

### Environmental, societal, human and economic impacts of innovation

#### Task 7.1 Strategy and innovation trajectory for traditional products.

The aim of this task was to develop case studies to assess the links between institutional organisations and products and processes innovations and to characterize the choices of collective strategy in order to specify the governance styles. The attention carried in the processes of Geographical Indications (GI) allowed covering the innovation in its three dimensions: innovation on products, innovation on technological processes, collective (or organizational) innovation.

Two new cases were studied and managed in a comparative approach: Tuscany pork meat, French Northern Alps cheeses

For Tuscany pork meat innovation was identified in the recovery of local pig breed, the Cinta Senese and attribution of PDO, e.g. Prosciutto Toscano. For the French Northern Alps Cheeses the work was focused on the bovine Abondance breed.

Innovation for traditional food is opening a really interesting approach if not limited to process innovation. Fostering the analysis on organizational innovation and on the effectiveness of territorial linkage, it is necessary to underline the raw material importance, at the same time for quality building, actor legitimacy, and traditional character of local food. By this way, such approach leads to a more realistic definition of traditional food. In a prospective approach, organizational innovation is based upon the process of rule elaboration and modifies the modalities by which local actors are appropriating environmental and cognitive resources. These modifications are concerning also a new distribution of abilities to manage and to renew such resources. The observations show that implied operators in collective actions are often more focusing on the main traits of raw materials, names and benefit capture than reinforcing the territorial anchorage of traditional food.

It is necessary to improve the relationship between industries and other territorial actors, especially for the questions dealing with activation and valorisation of local resources. The technical innovation should preserve and reinforce the territorial anchorage of traditional foods.

#### Task 7.2 - Environmental impacts of innovations for TFPs.

The aim of this task was to identify pollution hot points and to assess environmental impacts of production steps after introduction of innovations in TFPs for different food items: cheese from raw milk, dry-cured ham, cauliflower. The activity was performed by acquisition of data from WP2A, WP2B and WP4. Calculation and assessment procedures were adopted from different models, guidelines and databases.

Results showed that the environmental impacts have negative or positive effects or any effect on innovative products used as experimental models. For example ripening room ventilation decreased environmental impact due to reduction of electricity consumption; addition of potassium lactate did not cause fundamental change of environmental impact; organic fertilizer vs mineral fertilizer treatment increased eutrophication and acidification and decreased global warming potential.

Food productions lines should be “environmentally friendly” developing different production alternatives from the ecologic and economic point of view.

#### Task 7.3 - Potential health impacts of innovations for TFPs.

This task included 4 studies namely Functionality trial, Bioavailability trial, Biochemical action trial and Metabolic action trial. Both functionality and bioavailability trials are completed, while biochemical action and metabolic action trials are in progress (biochemical and statistical analyses to be completed).

Functionality trial. the aim of this cross-over intervention trial was to evaluate, after ingestion of modified/unmodified (low saturated fatty acids/control) dairy product, selected markers of cardiovascular disease, antioxidant status and oxidative damage in 30 healthy normolipidemic volunteers enrolled according to specific criteria. No significant differences were found between the start and the end of the intervention period in oxidative stress biomarkers for both groups as well as in biomarkers of antioxidant status, except for both plasma vitamin E and plasma vitamin C increasing in volunteers consuming low saturated fat cheese. The main finding of this study is related to the effect of consumption of cheese with modified lipid profile in terms of reduction of saturated fatty acids in limiting the increased blood concentration of atherogenic fatty acids.

The extrapolation of this result in public health advice for promotion of modified cheese consumption should require further confirmation; however changing lipid profile of dairy products maintaining as much as possible their characteristics could be an area of interest in terms of potential functionality of these foods.

Bioavailability trial. The aim was to evaluate the effect of acute ingestion of fresh and stored strawberries (300 g) on antioxidant status in 13 healthy volunteers enrolled according to specific criteria. The results of this study showed that bioactive compounds and their bioavailability could be affected by domestic storage conditions. The larger is the time of storage the larger is the loss of bioactive compounds protective for human health.

#### Task 7.5 Traditional products and the economic impact of innovation.

The activity has been focused on the analyses of the economic impacts of innovations on small and medium sized enterprises (SMEs) of the food industry. In particular the aim was to analyse the practical handling of innovations in TFPs and their economic impacts in SMEs and to elaborate conclusions and recommendations to better introduce and link innovative activities to this group of companies. Guideline-based telephone interviews with representatives of different companies of the beverages industry, the dairy industry as well companies producing fruit and vegetables or meat in Germany and Italy had been carried out to get an insight into the situation of innovation in companies of the food industry. In this context 27 questions were discussed with the companies during the telephone interview. One category of questions contains general information of the company (for example number of employees), the second category deals with the situation of innovation (for example barriers of innovation) and finally the last category concerns with success and failure of innovative products in the specific company.

Moreover, for counterchecking the results of the written company survey and the case studies the results were discussed with selected experts who are firm in the field of innovations in the context of a symposium.

Results showed that SMEs of the Traditional Food Sector should be informed about factors able to impact the success of innovation in a positive way. If these factors are realized, the success rate of innovation can be enhanced and the positioning of SMEs on the market can be confirmed. ■

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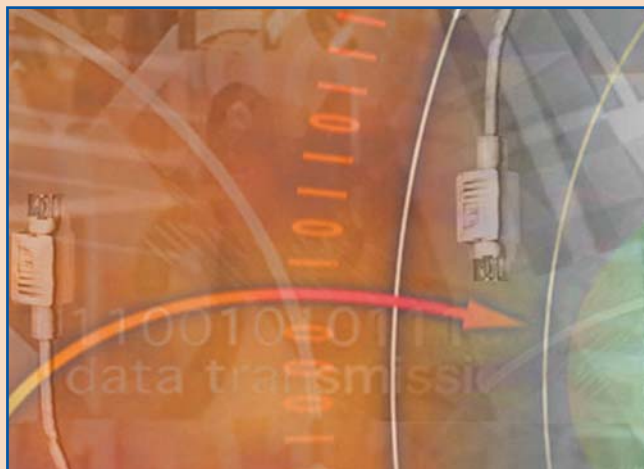
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## Work Package 8: Dissemination, training and technology transfer

The Techno-Scientific Mediators (TSM) of the 11 Training and Dissemination Units (TDUs) established at the SPES (Spread European Safety) Food & Drink National Federations and the research partners continued to implement successfully a number of technology transfer activities to TFP SMEs. The actions targeting SMEs took place in several countries to ensure a large dissemination and exploitation of results in France, Italy, Belgium, Greece, Spain, Portugal, Denmark, Czech Republic, Hungary, Austria and Turkey. From the beginning of training activities until now about 130 events (i.e., workshops, seminars and courses) targeting more than 3.000 attendees from the traditional food sector were implemented in strong cooperation with the research partners and centers of excellence of the project. The activities covered a wide range of topics (i.e., project research results, state of the art on food innovations, evolving standards and legislation at EU and national level, recent developments on health and nutritional claims, food labeling, food packaging, chain management, predictive modeling, risk assessment, consumer expectations and behaviors, etc.) and ensured that SMEs' specific requests were fulfilled. More training events are planned to take place from November 2009 until March 2010. Information on this kind of events will be published at the national WebPages of SPES members and at the project website: <http://www.truefood.eu/INFOforSMEs/TRAININGforSMEs.asp>

In addition to the training events, TDUs kept regular contacts with SMEs through meetings, visits, round table discussions, translation and dissemination of scientific articles that are of direct interest of TFP SMEs, etc. TDUs will continue to implement knowledge transfer activities until the end of the project life using different tools. The interaction between TDUs and SMEs is expected to increase in the next months leading to a stable and long-standing cooperation for the benefits of the SMEs mainly working in the traditional food sector.

An important tool developed under WP8 is the document "Guideline on effective knowledge and technology transfer activities to SMEs in the food sector with particular focus to



traditional food manufacturers". The document was prepared by project partners (Campden & Chorleywood Hungary in collaboration with Agriconsulting, ENEA, NOFIMA, SPES members - Federalimentare, FEVIA, FIAB and SEVT). An electronic and printed version of the booklet will be available by the end of the year.

In addition to the technology transfer activities, TDUs - SPES members and research partners carried out a wider information campaign for communication and dissemination of results using different communication tools and participating in several meetings and conferences at national, European and international level. Furthermore, TDUs - SPES members are now starting with the organization of the final project conference, which will be held at the Library Solvay in Brussels (Belgium) the 13th of April 2010. Information on the conference programme and registration will be available soon. ■

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